



INVENTOR(S): Weber, Paul R., et. al.

ATTY FILE NO.: 1A0013.CP2

TITLE: Semi-Frozen Food Product Carbonator

FILED: 8/16/2000

EXAMINER: C. Bushey

SERIAL NO.: 09/639,868

ART UNIT: 1724

PAPER: Clean Sheets of Claims.

1. A gas infusion device for mixing a gas with a liquid for dissolving the gas into solution in the liquid, comprising:
a tank having a top end, a bottom end and a sidewall extending there between defining a tank interior, the tank having a first liquid inlet and a second liquid inlet, a gas inlet, a liquid outlet and a level control all substantially located on the top end thereof, the first liquid inlet for connection to a source of a first liquid and the second liquid inlet for connection to a source of a second liquid different from the first liquid for admitting the first and second liquids into the tank interior and the gas inlet for connection thereof to a pressurized source of the gas for admitting thereof into the tank interior, the level control for maintaining a predetermined total volume of liquid within the tank interior wherein a predetermined minimum liquid level is maintained above the tank bottom end, and the gas inlet having a diffuser in fluid communication therewith and located within the tank interior at a level generally below the predetermined minimum liquid level so that gas entering the tank interior is finely mixed with the total volume of liquid, and the liquid outlet having a tube portion extending there from within the tank interior and terminating closely adjacent the tank bottom end, and including a baffle plate positioned within the tank interior above the tank bottom end and below the minimum liquid level and the plate including a first hole for the liquid outlet tube portion to extend there through and the baffle plate having a plurality of secondary holes.

2. The device as defined in claim 1, and where the first liquid is water and the second liquid is a beverage syrup.

COPY OF PAPER
ORIGINALLY FILED

RECEIVED

SEP 06 2002

TC 1700

3. A carbonator, comprising:
a tank having a top end a bottom end and a sidewall extending there between defining a tank interior,
the tank having a water inlet connected to a source of water and a syrup inlet connected to a source of syrup, and having a gas inlet connected to a source of pressurized carbon dioxide gas, and a beverage outlet,
a level sensor located in the tank interior, the level sensor connected to a control, the control for maintaining a predetermined combined volume of syrup and water within the tank interior wherein a predetermined minimum liquid level is maintained above the tank bottom end,
a tube portion in the tank interior and fluidly connected to the beverage outlet and extending there from in the tank interior and terminating closely adjacent the tank bottom end.
4. The carbonator as defined in claim 3 and further including a diffuser in the tank interior and fluidly connected to the water inlet and positioned at a level therein generally below the predetermined minimum liquid level so that carbon dioxide gas entering the tank interior is finely mixed with the total volume of liquid.
5. The carbonator as defined in claim 3, and including a baffle plate positioned within the tank interior above the tank bottom end and below the minimum liquid level.
6. The carbonator as defined in claim 4, and including a baffle plate positioned within the tank interior above the tank bottom end and below the minimum liquid level.